

1   **METHOD AND APPARATUS FOR TREATMENT OF EYE DISORDERS**  
2   **USING ARTICULATED ARM COUPLED ULTRAVIOLET LASERS**

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7   **ABSTRACT**

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9   Surgical method and apparatus for presbyopia correction and glaucoma by  
10   laser removal of the sclera tissue are disclosed. The disclosed preferred  
11   embodiments of the system consists of a beam spot controller, an articulated  
12   arm and an attached end-piece. The basic laser beam includes UV laser having  
13   wavelength ranges of (0.19-0.36) microns, generated from UV excimer lasers  
14   of ArF, XeCl or solid state lasers of Nd:YLF, Nd:YAG, Ti:sapphire with harmonic  
15   generation using nonlinear crystals. Presbyopia is treated by ablation of the  
16   sclera tissue in predetermined patterns outside the limbus to increase the  
17   accommodation of the ciliary body of the eye. Glaucoma is treated by  
18   decreasing of intra ocular pressure of the laser surgery. A new concept based  
19   on a 2-component model is proposed and the accommodation increase is given  
20   by both lens thickness increase and its anterior shift.